

Filed: June 23, 2025

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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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LUXOTTICA OF AMERICA INC.,

Petitioner,

v.

E-VISION OPTICS, LLC,

Patent Owner.

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Case No. IPR2024-01070

U.S. Patent No. 8,801,174

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**PETITIONER'S REPLY IN SUPPORT OF PETITION FOR  
INTER PARTES REVIEW OF U.S. PATENT NO. 8,801,174**

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## LIST OF EXHIBITS

| <b>Exhibit No.</b> | <b>Description</b>                                                                 |
|--------------------|------------------------------------------------------------------------------------|
| 1001               | U.S. Patent No. 8,801,174 (“174 patent”)                                           |
| 1002               | Declaration of John Feland, Ph.D.                                                  |
| 1003               | U.S. Patent No. 2,915,598 to D.L. Brunton (“Brunton”)                              |
| 1004               | PCT Publication No. WO 2010/080999 to Kokonaski et al. (“Kokonaski-999”)           |
| 1005               | U.S. Patent No. 2,207,705 to J.W. Cox (“Cox”)                                      |
| 1006               | Japanese Patent Application Publication No. S58-113913 (“Hattori-913”)             |
| 1007               | U.S. Patent No. 3,883,701 to Delorenzo (“Delorenzo”)                               |
| 1008               | G.B. Patent No. 799,294 to Carling (“Carling”)                                     |
| 1009               | U.S. Patent No. 2,930,857 to Hollingsworth (“Hollingsworth”)                       |
| 1010               | U.S. Patent 4,290,052 (Eichelberger)                                               |
| 1011               | Injection Molding Handbook, Ch. 17 (3d ed. 2000)                                   |
| 1012               | U.S. Provisional Application 61/157,579 to Kokonaski et al. (“Kokonaski-579”)      |
| 1013               | U.S. Publication No. 2008/0012832 to Li GuangHai (“GuangHai”)                      |
| 1014               | U.S. Publication No. 2007/0030254 to Robrecht et al. (“Robrecht”)                  |
| 1015               | U.S. Patent Publication No. 2005/0230596 A1 (“Howell-596”)                         |
| 1016               | Sikonowiz, Walter, DESIGNING AND CREATING PRINTED CIRCUITS (Hayden Book Co., 1981) |
| 1017               | U.S. Publication No. 2008/0088596 to Prest et al. (“Prest”)                        |

| <b>Exhibit No.</b> | <b>Description</b>                                                                                                                                                                                                                        |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1018               | U.S. Publication No. 2008/0136788 to Nishikawa et al. (“Nishikawa”)                                                                                                                                                                       |
| 1019               | U.S. Provisional Patent Application No. 60/583,169 (“Howell-169”)                                                                                                                                                                         |
| 1020               | U.S. Patent No. 5,049,090 to Johnson (“Johnson”)                                                                                                                                                                                          |
| 1021               | U.S. Patent No. 4,598,960 to DiSanto et al. (“DiSanto”)                                                                                                                                                                                   |
| 1022               | C.V. of John Feland, Ph.D.                                                                                                                                                                                                                |
| 1023               | Federal Court Management Statistics (excerpt), available at <a href="https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf">https://www.uscourts.gov/sites/default/files/fcms_na_distprofile1231.2023_0.pdf</a> |
| 1024               | Declaration of Sylvia D. Hall-Ellis                                                                                                                                                                                                       |
| 1025               | Case No. 8:23-cv-02013 (C.D. Cal.), Dkt. 115, Stipulated Interim Order Regarding Case Schedule                                                                                                                                            |
| 1026               | Case No. 8:23-cv-02013 (C.D. Cal.), Dkt. 78, Plaintiff e-Vision’s Claim Construction Brief                                                                                                                                                |
| 1027               | Case No. 8:23-cv-02013 (C.D. Cal.), Dkt. 92, Plaintiff e-Vision’s Responsive Claim Construction Brief                                                                                                                                     |
| 1028               | Transcript of June 13, 2025 Deposition of Dr. James Oliver in IPR2024-01070                                                                                                                                                               |
| 1029               | Transcript of June 11, 2025 Deposition of Dr. James Oliver in IPR2024-01069                                                                                                                                                               |
| 1030               | Transcript of June 11, 2025 Deposition of Dr. James Oliver in IPR2024-01030                                                                                                                                                               |

## **I. INTRODUCTION**

The claims of the '174 patent are unpatentable under Grounds 1-9. e-Vision's arguments—focused on features of independent claims 1 and 15—fail to overcome the Petition's showing.

e-Vision argues for claim 1 that the Petition's references do not disclose “the first and second electrical conductors are configured to couple the electronics module to the first temple to constrain the electronics module.” However, this argument improperly seeks to narrow the claim limitation. e-Vision's proposed construction is unsupported by either the intrinsic or extrinsic record and contradicts its prior position before the district court. The Board should reject this inconsistent argument and determine that claim 1 and its dependent claims are unpatentable, as set forth in the Petition.

As to claim 15, e-Vision argues that the Petition's references fail to disclose or suggest the preamble term “method.” Yet, each reference cited under these grounds describes methods, as explained by Dr. Feland. e-Vision's challenge concerning the preamble therefore lacks merit.

Accordingly, the Board should reject e-Vision's arguments and cancel the challenged claims.

## II. CLAIM CONSTRUCTION

e-Vision’s sole argument for the patentability of claims 1-14 relies on its proposed interpretation of the “constrain” limitation (i.e., limitation 1[i]): “wherein the first and second electrical conductors are configured to couple the electronics module to the first temple to constrain the electronics module.” *See, e.g.*, POR, 21 (table of alleged deficiencies in Grounds 1-7 covering claims 1-14)<sup>1</sup>.

The ’174 patent defines “constrain” in accordance with its ordinary meaning: “provid[ing] support (i.e. a restraining force)” and “retain[ing] the module in a fixed position within the temple.” Pet., 20 (quoting Ex.1001, 11:52-55); *see also id.*, 9-10 (citing Ex.1002, ¶¶50-51); Ex.1028, 16:19-17:6 (e-Vision’s expert agreeing that the ’174 patent’s inventors applied the plain and ordinary meaning in defining “constrain” at Ex.1001, 11:52-55). Luxottica consistently applied this plain and ordinary meaning in both the IPR and district court.

In contrast, e-Vision treats the term “constrain” like a “nose of wax,” molding its meaning to suit its needs; Patent Owner argued for a broad definition in district court and now seeks a narrow construction here. In district court, e-Vision asserted that “couple...includes any kind of physical contact” and that “constrain” broadly

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<sup>1</sup> Unless otherwise noted, when quoting the POR, Petitioner has removed e-Vision’s added italics-emphasis.

encompasses “different types of forces.” Ex.1026, 19. Now, however, e-Vision contends that “constrain” requires “the electrical conductors physically hold the electronics module in place by *a physical insertion...*” and further demands “a tightening force by *use of a fastener.*” POR, 35-36, 41 (emphasis added). e-Vision’s construction du jour lacks support in both the intrinsic and extrinsic record.

**A. The Term “Constrain” Should Be Given Its Plain And Ordinary Meaning**

The term “constrain” should be given its ordinary meaning in view of the specification: to provide support (i.e., a restraining force) to retain the module in a fixed position within the temple. Ex.1028, 16:19-17:6; *see also id.*, 32:16-18 (e-Vision’s expert explaining that a restraining force refers to “a force that is applied that can sustain the constraint requirement”). Both the Petition and Institution Decision recognize that the specification addresses the meaning of “constrain.” Pet., 10-11, 20; Paper 13 (“ID”), 13. The specification further provides context for how “constrain” is used in a manner consistent with the claims:

In some embodiments, the first electrical conductor may be configured to constrain or substantially constrain the electronic module. In this context, “constrain” may refer to when the first electrical conductor is configured *to provide support (i.e. a restraining force) for the electronics module to retain the module in a fixed position within the temple.*

Ex.1001, 11:50-55 (emphasis added). Luxottica has consistently relied on this explanation—both in district court and in this proceeding—to interpret the “constrain” limitation. *See* Ex.2018, 12-14; Pet., 10-11. This interpretation aligns with the plain and ordinary meaning as understood by a person of ordinary skill in the art (“POSITA”). Pet., 10-11; Ex.1002, ¶51 (Dr. Feland opining that a POSITA would interpret the claim terms consistently with the “inventor’s understanding of the scope of the terms,” as described in the specification).

Nothing in the prosecution history contradicts this plain and ordinary meaning of “constrain.” The term first appeared during prosecution in then-pending dependent claims 42 and 46. *See* Ex.2011, 379-384. In response to a Non-Final Office Action, e-Vision argued that two cited references failed to teach “physical[ly] coupling” components because they did not describe applying a force to the module. *Id.*, 152-153. The Examiner rejected e-Vision’s argument and issued a Final Office Action. *Id.*, 115-127. In response, e-Vision incorporated the limitations of dependent claims 42 and 46 into independent claim 41—explicitly requiring that the electrical conductors “constrain” the electronics module. *Id.*, 104-105.

In district court, Luxottica evaluated the prosecution history to reach the same conclusion regarding the “constrain” limitation’s scope. Ex.2018, 13 (“To overcome a PTO rejection, the applicants later amended the claim to add constrain..., thereby imposing an additional limitation.”). In its POR, e-Vision likewise analyzed the

prosecution history and arrived at a construction consistent with Luxottica's. POR, 39 ("the prosecution history confirms that constrain requires (1) a restraining force and (2) retaining the electronics module in a fixed position, and a POSITA would have understood the same.").<sup>2</sup>

**B. e-Vision Improperly Narrows The Ordinary Meaning Of "Constrain" And Contradicts Its Own District Court Construction**

e-Vision has failed to apply a consistent meaning of "constrain," proposing conflicting constructions in the district court and this IPR.<sup>3</sup>

In district court, e-Vision asserted that "couple...includes any kind of physical contact" and that "constrain" broadly encompasses "different types of forces." Ex.1026, 19. However, in this IPR, e-Vision takes a far narrower view, particularly when addressing Brunton (Ex.1003), contending that "constrain as claimed requires the electrical conductors physically hold the electronics module in place by *a physical insertion....*" POR, 35-36 (citing Ex.1001, 11:52-57, 11:59-65) (emphasis added); *see also* Ex.1028, 22:19-24:10 (e-Vision's expert asserting that "constrain" requires "a physical insertion of the electrical conductors"), 25:22-26:22. Here,

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<sup>2</sup> Elsewhere in the POR, e-Vision improperly narrows "constrain," trying to navigate the prior art, as explained below.

<sup>3</sup> e-Vision's expert did not consider e-Vision's district court claim construction briefs when forming his opinions. Ex.1028, 53:13-18.

e-Vision commits a cardinal sin of claim construction by improperly importing an additional limitation into the claim—mandatory physical insertion—from an example in the specification. *See Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed. Cir. 2002).

Further contradicting its own broad district court construction, e-Vision now argues that Brunton’s eyeglasses must “apply[] a tightening force by use of a fastener” in order to satisfy the “constrain” limitation. POR, 41 (“Petitioner has not shown that these contact pins constrain the hearing aid unit as required by the patent (e.g., applying a tightening force by use of a fastener).”). Yet e-Vision provides no citation or support for why this specific method of “constrain[ing]” is allegedly “required by the patent.” *Id.* This unsupported position reflects an impermissible attempt by e-Vision to narrow the meaning of “constrain” to avoid Brunton’s teachings.

Moreover, e-Vision argued in district court that “constrain” does not require a fixed position; however, in this IPR, it adopts the opposite position. *Compare* Ex.1026, 18 (asserting in district court, “it is clear that constrain within the ’174 patent does not require a fixed position”) *with* POR, 39 (asserting that “the claim language and the intrinsic record...requires that the electronics module be physically held in place in a fixed position.”), 35 (asserting “the intrinsic record of the ’174 patent [] emphasizes that constrain requires physical security and fixing an item in

place”), 39 (asserting “the prosecution history confirms that constrain requires (1) a restraining force and (2) retaining the electronics module in a fixed position, and a POSITA would have understood the same.”).

e-Vision also asserted in district court that the claim terms “couple” and “constrain” encompass moveable and removable connections, and that a restraining force “may only act in limited circumstances for certain types of movement” and is applied “when the module begins to move in a particular direction.” Ex.1026, 19, 17. This interpretation is consistent with dependent claim 9, which depends on claim 1 and requires “the electronics module is configured to be *removably* coupled to the first temple.” Ex.1001, claim 9 (emphasis added). But in this IPR, e-Vision reverses course, asserting that “constrain” excludes any removable connection or even minor movement of the electronics module:

- “The term constrain, as recited in the challenged claims, ‘restricts the [electronics] module from being removed from the temple or moved within the temple.’” POR, 2 (quoting Ex.1001, 11:62-63).
- “Therefore, constrain as claimed is not substantially constrained and does not allow for minor movements.” *Id.*, 39.

Further underscoring this inconsistency, e-Vision previously cited the specification’s use of “substantially constrain” to support a broader interpretation of “constrain” that permitted some movement. *See* Ex.1026, 19; Ex.1027, 12

(“constrain may expressly hold just ‘one end of the [] module’ ‘substantially in place.’”) (quoting Ex.1001, 11:50-12:3). However, in this IPR, e-Vision again reverses course, contending that “the ’174 patent distinguishes between the term constrain by itself and the phrase ‘substantially constrain,’ further clarifying that constrain requires physical restraint and no minor movements.” POR, 37; *id.*, 39 (“constrain as claimed is not substantially constrained and does not allow for minor movements.”).

e-Vision cannot be permitted to interpret “constrain” one way in district court for purposes of infringement, and the opposite way in this IPR to preserve validity. *See CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1299 (Fed. Cir. 2021) (“This case falls squarely within the principle that a ‘patent may not, like a nose of wax, be twisted one way to avoid anticipation and another to find infringement.’”) (quoting *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1351 (Fed. Cir. 2001)); *see also White v. Dunbar*, 119 U.S. 47, 51 (1886) (“Some persons seem to suppose that a claim in a patent is like a nose of wax, which may be turned and twisted in any direction, by merely referring to the specification, so as to make it include something more than, or something different from, what its words express.”). The Board should reject e-Vision’s newly tailored construction of “constrain” as an improper attempt to avoid invalidity.

### III. THE CHALLENGED CLAIMS ARE UNPATENTABLE

#### A. Claim 1 Is Unpatentable Because The Prior Art Discloses Using Conductors To “Constrain” The Electronics Module

##### 1. Brunton Renders Claim 1 Unpatentable (Grounds 1-2)

For Grounds 1-2, e-Vision disputes only whether Brunton discloses the “constrain” limitation. POR, 35-44. Specifically, e-Vision argues that although Brunton’s contact pins couple the hearing aid unit to the temple, they do not “constrain” the unit. *See id.*

However, Brunton states that the contact pins on its hearing aid unit are “*adapted to be inserted in tubular contacts*” in sockets, which are in the cavity of the temple. Ex.1003, 3:57-61 (emphasis added). As the Institution Decision notes, Brunton discloses that “the [hearing aid] units may be provided with any suitable number of contact pins and the sockets provided with a corresponding number of tubular contacts that are positioned to receive the pins and in which *the pins are frictionally retained.*” ID, 19 (quoting Ex.1003, 3:61-65) (brackets in ID; emphasis added); Pet., 20. Brunton further describes that its “hearing aid unit 17 [is] positioned in a cavity 13 in the temple 13, 40 [and] *snapped into sockets* 19.” Ex.1003, 3:39-41 (emphasis added).

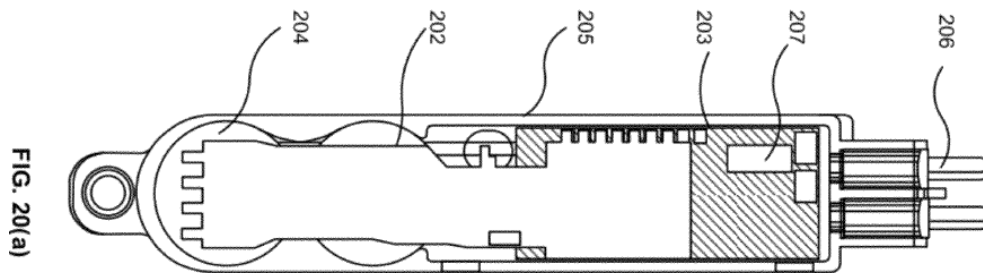
Brunton identifies the functional benefit of this constraint: “[a] further object of the invention is to provide a means for mounting a hearing aid...in which the casing with the elements therein is continuously in a fixed or stationary position and

is not constantly flapping against clothing or portion of the body.” *Id.*, 2:17-22. In short, Brunton not only discloses the “constrain” limitation, but also highlights that frictional restraint achieves the precise effect e-Vision contends is missing—holding the hearing aid unit in “a fixed or stationary position.”

As discussed above, e-Vision attempts to avoid Brunton by advancing an unsupported construction of “constrain” in its POR. *See supra* §II.B. But Brunton need not disclose a “physical insertion” and “applying a tightening force by use of a fastener” to satisfy the “constrain” limitation. *See* POR, 35, 41. Such a restrictive construction improperly narrows the term’s ordinary meaning and contradicts e-Vision’s prior statements in district court.

e-Vision also mischaracterizes both Brunton’s disclosure and the Petition’s description of it. For example, e-Vision argues that “all Petitioner has shown is that the contact pins and sockets touch,” and that Petitioner “[relies] on the assumption that touching implies some amount of frictional force.” *Id.*, 40. But this misstates Luxottica’s position. The Petition explains that Brunton discloses “frictionally retain[ing]” the contact pins within the temple sockets, which satisfies the “constrain” limitation. *See* Pet., 20-21 (citing Ex.1002, ¶¶63-65). Even e-Vision acknowledges Brunton’s statement that its “contact pins [are] ‘frictionally retained.’” POR, 40 n.2 (quoting Ex.1003, 3:61-65). Thus, Brunton explicitly discloses the use of a frictional restraining force.

Brunton's hearing aid unit, with its extended contact pins, is akin to an embodiment of the electronics module disclosed in the '174 patent. Fig. 20(a) illustrates this embodiment, depicting "pogo pins" (206) that "may form one or more connections between the electronic components disposed inside the electronics module to electronic components that may be disposed outside the module, and electrical component 207 coupled to the PCB 203." Ex.1001, 27:40-45.



*Id.*, Fig. 20(a); *see also id.*, 25:51-54 (“A slip ring or a pogo ping may generally be used to maintain a conductive path through the temple and the lens housing, even as the temple is moved relative to the lens housing.”).

e-Vision further argues that even if Brunton discloses a frictional retaining force, “mere fiction...is not enough” to effectively constrain the hearing aid unit. POR, 39. e-Vision points to Brunton's disclosure of a cover plate and argues that it is the cover plate—not friction—that holds the electronics in place. *Id.*, 42-44. But e-Vision's argument collapses on itself. As e-Vision acknowledges in the POR, Brunton's cover plate is added only *after* “the sockets for the transistor and unit, such as the sockets 1 and 20 [are] frictionally held in the cavity [of the] temple.” *Id.*,

42 (citing Ex.1003, 3:71-4:1). e-Vision does not—and cannot—point to anything in Brunton that describes the cover plate holding the electronics in place.

**2. Kokonaski-999 In View Of Brunton Renders Claim 1 Unpatentable (Ground 4)**

As with Grounds 1-2, e-Vision argues that Brunton’s purported failure to disclose a frictional restraining force would deter a POSITA from combining Brunton with Kokonaski-999, as set forth in Ground 4. POR, 45-48. But, for the reasons discussed above, this is incorrect. *See supra* §III.A.1.

**3. Hattori-913 Renders Claim 1 Unpatentable (Ground 5)**

For Ground 5, e-Vision’s sole argument is that Hattori-913 does not disclose “constraining [the] electronics module.” POR, 48-49. But as Dr. Feland explains, a zebra connector like that in Hattori-913 “provid[es] mechanical stability” while also “maintaining excellent electrical conductivity.” Ex.1002, ¶134. Dr. Feland also cited the DiSanto patent, which confirms that such zebra connectors “make reliable connections *by exerting pressure* between contacting surfaces.” *Id.* (citing Ex.1021, 6:41-62) (emphasis added).

e-Vision argues that “Hattori-913’s ZEBRA connector is [not] physically restrained or bound to the temple (or ‘coupled’).” POR, 51. But this argument improperly conflates physical restraint or binding with the actual claim requirement under limitations 1[e]/[g], which simply requires that the conductors be “coupled to” the temple. Pet., 46-47; Ex.1001, 6:57-60 (“‘Coupled’ may further comprise fixedly

attaching two components...but does not so require.”). As the ’174 patent explains, “coupled” can include being “dispos[ed] within.” Ex.1001, 6:52-60. e-Vision itself acknowledges that Hattori-913 “discloses placing its ZEBRA connector in the temple,” thus being “disposed within” and satisfying the “coupled to” requirement of limitations 1[e]/[g]. POR, 51.

Moreover, e-Vision’s assertion that its translation—allegedly prepared by “a team of two translators”<sup>4</sup>—is more accurate than Luxottica’s translation is also irrelevant. *See* POR, 48, 51-52. Under either translation (“embedded” in the temple or “incorporated” in the temple), Hattori-913’s zebra connector is still “coupled” to the temple as described in the ’174 patent. *See* Ex.1001, 6:52-60.

e-Vision also argues that “Petitioner has not shown that Hattori-913 discloses or suggests that conductors [of the zebra connector] are constraining Hattori-913’s integrated circuit.” POR, 52. But the Petition explains that the zebra connector applies pressure that “establish[es] a secure electrical connection and also couple[es] [Hattori-913’s] integrated circuit to the temple to retain it in a fixed position.” Pet., 50-51. Indeed, e-Vision itself acknowledges that the Petition provides evidence showing that “Hattori-913’s ZEBRA connector makes conductive parts touch and

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<sup>4</sup> Ex.2019 contains no indication that its translation was prepared by “a team of two translators.” Ex.2019, 1.

***maintain contact.***” POR, 49-50 (emphasis added); *see id.*, 52 (conceding the Petition shows the zebra connector’s “elastomeric material (i.e., a flexible or rubber-like material) ***keeps conductors in contact***”) (emphasis added). Dr. Oliver also concedes that a POSITA would have understood Hattori-913’s zebra connector to be “an elastomeric material [that] appl[ies] pressure to keep conductive parts in contact.” *See* Ex.2016, ¶100. Thus, based on e-Vision’s own characterization and expert testimony, Hattori-913 discloses a zebra connector that applies force to maintain contact between the integrated circuit and the zebra connector—thereby constraining the integrated circuit.

#### **4. Delorenzo Renders Claim 1 Unpatentable (Grounds 6-7)**

For Grounds 6-7, e-Vision argues that Delorenzo does not disclose limitations 1[d] and 1[i]: “an electronics module disposed at least partially within the first temple” and “wherein the first and second electrical conductors are configured to couple the electronics module to the first temple to constrain the electronics module,” respectively. POR, 54, 56. However, e-Vision’s arguments misinterpret both the Petition’s analysis and Delorenzo’s disclosure.

With respect to limitation 1[d], e-Vision argues that the Petition “never identifies any disclosure that teaches or suggests the claimed electronics module.” POR, 54. But the Petition identifies “temple 15” of Delorenzo as the claimed electronics module. Pet., 57 (“temple 15 is an electronics module”).

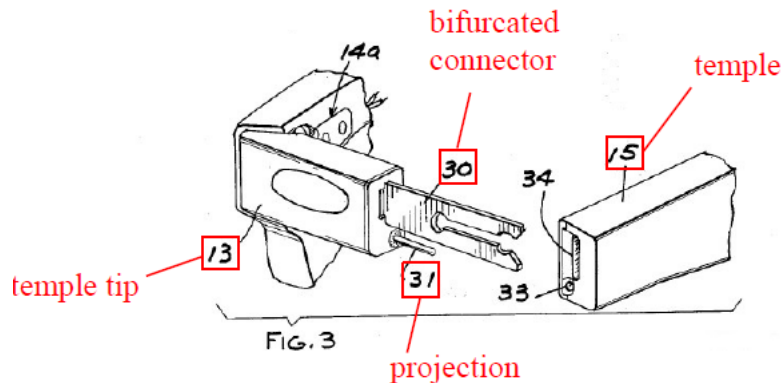
The Petition explains that Delorenzo’s temple comprises two portions: a front portion (“temple tip 13”) and a back portion (“temple 15”). *Id.* (describing “the fully assembled temple of the eyewear (temple tip 13 plus temple 15).”). The temple’s back portion (i.e., temple 15) includes electrical components for a hearing aid, such as “a microphone, amplifier, and battery, disposed in the frames.” *Id.*, 6 (citing Ex.1007, Abstract, Fig. 1); *id.*, 57 (explaining that temple 15 includes a “microphone element 16” and “an amplifier element 17”). As set forth in the Petition, the back portion (temple 15) satisfies the requirement in limitation 1[d] that an electronics module is disposed at least partially within the first temple. Pet., 55-57.<sup>5</sup>

Regarding limitation 1[i]—the “constrain” limitation—the Petition explains that Delorenzo’s electrical conductors located at the front portion (temple tip 13) extend into and mechanically *constrain the electronics module (temple 15) containing the electronic components*. Pet., 60 (citing Ex.1007, 2:44-46). Delorenzo describes these conductors as “bifurcated connector 30” and “projection

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<sup>5</sup> The Institution Decision raises a concern about whether Luxottica’s mapping requires temple 15 to be embedded within itself. ID, 21-22. The temple’s back portion (“temple 15”) is encompassed within the temple’s overall temple structure and thus is disposed at least partially within the temple itself.

or male element 31,” both coupled to the temple’s front portion (temple tip 13). *See* Pet., 7.



Ex.1007, Fig. 3 (annotated).

Delorenzo discloses that bifurcated connector 30 located on temple tip 13 is inserted through passage 34 on temple 15 (the electronics module), so that bifurcated connector 30 “mechanically connects onto post 32.” Pet., 60 (quoting Ex.1007, 2:44-46). Similarly, male connector 31 extends into and engages with female connector 33 of the electronics module. *Id.* (citing Ex.1007, 2:49-54). In this configuration, bifurcated connector 30 and male element 31 extend into and mechanically constrain the electronics module (temple 15), satisfying limitation 1[i]. *See* Pet., 60-61; Ex.1002, ¶172.

**B. Claims 2-14, Which Depend On Claim 1, Are Unpatentable For The Unrebutted Reasons Set Forth In The Petition**

e-Vision provides no additional arguments for dependent claims 2-14 beyond those presented for claim 1, and these dependent claims are unpatentable for the reasons set forth under Grounds 1-7. Pet., 13-69.

**C. Claim 15 Is Unpatentable**

**1. Kokonaski-999 In View Of Kokonaski-579 Renders Claim 15 Unpatentable (Ground 8)**

For Ground 8, e-Vision argues only that “Petitioner fails to show that Kokonaski-999 in view of Kokonaski-579 renders obvious the preamble limitation ‘[a] first method’ as recited in the challenged claim 15.” POR, 59. In other words, e-Vision concedes that Kokonaski-999 and Kokonaski-579 disclose all steps of the claimed method, yet nonetheless contends that the references do not disclose “a first method,” which comprises all those same steps.

As an initial matter, the preamble is not a limitation of claim 15. The Federal Circuit has held that “as a general rule preamble language is not treated as limiting.” *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1347 (Fed. Cir. 2012). Here, e-Vision presumes—without citing any supporting authority—that the preamble is limiting, claiming that “Petitioner glosses over this limitation and does not formally address it in its arguments.” POR, 59. But “a preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.”

*Cochlear Bone Anchored Sols. AB v. Oticon Med. AB*, 958 F.3d 1348, 1355 (Fed. Cir. 2020) (internal quotation omitted). Claim 15’s body is structurally complete, reciting all steps of the claimed method. The preamble adds no additional meaning—not even a statement of purpose or intended use. Accordingly, the Board should reject e-Vision’s argument regarding Kokonaski-999 and Kokonaski-579 because the preamble is not limiting.

Even if the preamble were considered limiting (which it is not), Kokonaski-999 and Kokonaski-579 still satisfy it. e-Vision does not dispute that both references disclose all the steps recited in the body of the claim. It is axiomatic that performing every step of a method amounts to performing the method itself. Thus, by disclosing each of the claimed steps, Kokonaski-999 and Kokonaski-579 necessarily disclose performance of the preamble’s “first method.”

Moreover, both Kokonaski-999 and Kokonaski-579 disclose methods. Specifically, Kokonaski-999 describes methods of manufacturing and assembling electroactive glasses. Ex.1004, [0026] (incorporating by reference U.S. App. No. 12/408,973 titled “Electro-active diffractive lens and method for making the same”), [0080]-[0085] (describing manufacturing methods including molding, machining, and using materials to create components of electro-active spectacles), claims 25-34. For example, it describes assembly of the electronics module, including disposing a capacitive touch switch “on a surface of the electronic module

202” and coupling it to the other electronic components, thereby allowing “a user [to] interact with the electronics module 202 to adjust operation of the electro-active spectacles.” *Id.*, [0047]; *see also id.*, [0039]-[0047] (describing the components of the electronics module). According to Kokonaski-999, “[t]he electronic module 202 can be positioned...in any portion of the frame 102 having an area or cavity designed to accept insertion of the electronic module 202.” *Id.*, [0041]. Similarly, Kokonaski-579 discloses a “method,” along with eyewear similar to Kokonaski-999’s. Ex.1012, 9, 12-14.

It is well established that “[a] reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *In re Applied Materials, Inc.*, 692 F.3d 1289, 1298 (Fed. Cir. 2012). e-Vision’s argument improperly treats the POSITA as a mere automaton, incapable of understanding the basic manufacturing steps disclosed in Kokonaski-999 and Kokonaski-579. *KSR Int’l v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (“A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.”). As Dr. Feland confirms, a POSITA would understand, among other things, that “Kokonaski-999 describes a method which includes providing a capacitive touch switch.” Ex.1002, ¶193.

**2. Howell-596 In View Of Eichelberger Renders Claim 15 Unpatentable (Ground 9)**

As with Ground 8, e-Vision argues for Ground 9 that “Petitioner has completely ignored” the preamble of claim 15, contending that the prior art does not

disclose or suggest “[a] first method.” POR, 60-61. Yet e-Vision concedes that Howell-596 and Eichelberger disclose all steps of the claimed method. *See id.*

As an initial matter, the preamble is not a limitation of claim 15, for the reasons discussed under Ground 8. *See supra* §III.C.1. e-Vision again presumes—without citing any supporting authority—that the preamble is limiting and argues that “Petitioner fails to address this requirement.” Pet., 60.

Even if the preamble were limiting (which it is not), Howell-596 and Eichelberger still satisfy it. e-Vision does not dispute that Howell-596 and Eichelberger disclose all the steps recited in the body of the claim. By Howell-596 and Eichelberger disclosing each of the claimed steps, they necessarily disclose performance of the preamble’s “first method.” *See supra* §III.C.1.

Regardless, both Howell-596 and Eichelberger disclose methods. Specifically, Howell-596 discloses that its “invention can be implemented in numerous ways, including as a...method.” Ex.1015, [0009]. It further describes methods of assembling eyewear. *Id.*, [0186]-[0206] (discussing eyewear assembly and mounting of components, such as a UV sensor). Similarly, Eichelberger discloses methods, including “fabricat[ion of] capacitive touch sensors.” Ex.1010, 1:35-36. It provides that “sensors 14 are fabricated upon insulative layer 16 by utilization of printed circuit board (PC board).” *Id.*, 3:43-47. Eichelberger touts the advantages of its method, including “allow[ing] electronic components...to be

installed directly upon the appropriate portions of the double-sided printed circuit board.” *Id.*, 3:53-58.

Moreover, “[a] reference must be considered for everything that it teaches, not simply the described invention or a preferred embodiment.” *In re Applied Materials*, 692 F.3d at 1298. e-Vision’s argument improperly treats the POSITA as a mere automaton, incapable of understanding the basic manufacturing steps disclosed in Howell-596 and Eichelberger. *KSR*, 550 U.S. at 421 (“A person of ordinary skill in the art is also a person of ordinary creativity, not an automaton.”). As Dr. Feland confirms, a POSITA would have understood, among other things, that “Eichelberger discloses providing a capacitive touch and disposing a plurality of electronic components on a capacitive touch switch.” Ex.1002, ¶217.

e-Vision also argues that “[a] POSITA would have understood that a mechanical button switch, as taught, would have been a more reliable solution for Howell-596’s glasses,” contending that “[a] POSITA, thus, would not have been motivated to implement the added expense and complication of a capacitive touch switch [from Eichelberger] for Howell-596’s glasses when the same would not have needed or desired such a change in the first place.” *Id.*, 62. However, the Petition explains in detail why a POSITA would have been motivated to construct the combination. Pet., 83-84.

Nonetheless, “[Federal Circuit] case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention.” *Novartis Pharm. Corp. v. West-Ward Pharm. Int’l Ltd.*, 923 F.3d 1051, 1059 (Fed. Cir. 2019) (citing *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir. 2004)). Indeed, the Board has held—affirmed by the Federal Circuit—that “the law does not exclude from an obviousness determination solutions which are more complex and/or expensive.” *See Polaris Wireless, Inc. v. Trueposition, Inc.*, IPR2013-00323, Paper 62 (Final Written Decision) at 36 (P.T.A.B. Nov. 3, 2014), *aff’d*, 622 F. App’x 915 (Fed. Cir. 2015); *see also Orthopedic Equip. Co. v. United States*, 702 F.2d 1005, 1013 (Fed. Cir. 1983).

**D. Claims 16-19, Which Depend On Claim 15, Are Unpatentable**

**1. Kokonaski-999 In View Of Kokonaski-579 Renders Claims 16-19 Unpatentable For The Unrebutted Reasons Set Forth In The Petition (Ground 8)**

e-Vision provides no additional arguments for dependent claims 16-19 under Ground 8 beyond those presented for independent claim 15, and these dependent claims are unpatentable as set forth in the Petition. *See supra* §III.C.1; Pet., 78-81.

## **2. Howell-596 In View Of Eichelberger Renders Claim 16 Unpatentable (Ground 9)**

For Ground 9, e-Vision argues that claim 16 is not unpatentable because a POSITA would not have been motivated to combine Howell-596 with Eichelberger, asserting that Howell-596 does not qualify as analogous art. POR, 63-64.

Prior art is considered analogous art if it is either (1) in the same field of endeavor or (2) reasonably pertinent to a problem addressed by the challenged patent. *Sanofi-Aventis Deutschland GmbH v. Mylan Pharms. Inc.*, 66 F.4th 1373, 1377 (Fed. Cir. 2023). The scope of analogous art is broad. *See Wyers v. Master Lock Co.*, 616 F.3d 1231, 1238 (Fed. Cir. 2010) (“The Supreme Court’s decision in [*KSR*] directs us to construe the scope of analogous art broadly[.]”) (citing *KSR*, 550 U.S. at 402).

First, the Petition establishes that Howell-596 is in the same field of endeavor as the ’174 patent. Pet., 82-84. The background of the ’174 patent describes its field:

Concurrent with these trends is ***another trend concerning the inclusion of electronic components and devices into spectacle eyewear***. The trend of utilizing electronics in eyewear appears to be accelerating and the applications being developed by others are expanding.

Ex.1001, 1:19-22 (emphasis added). The field of the ’174 patent thus encompasses eyewear with electronic components and falls within the broader category of consumer electronics intended for widespread use. *See* Ex.1002, ¶29; *see also*

*Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1380 (Fed Cir. 2019) (explaining the field of endeavor may be determined based on an express disclosure in the Background section (citing *In re Wood*, 599 F.2d 1032, 1036 (C.C.P.A. 1979))). As the Federal Circuit has explained, “it is necessary to consider the reality of the circumstances—in other words, *common sense*—in deciding in which fields a person of ordinary skill would reasonably be expected to look....” *In re Bigio*, 381 F.3d 1320, 1326 (Fed. Cir. 2004) (internal quotations omitted; emphasis original). e-Vision’s assertion that Howell-596 is not in the same field as the ’174 patent is inconsistent with “the reality of the circumstances.” As Dr. Feland explained, Howell-596 discloses “eyewear includ[ing] electronic components that are mounted in an eyewear frame’s temple and may be enclosed in a waterproof protective module housing.” See Ex.1002, ¶40. Like the ’174 patent, Howell-596 relates to consumer electronics, including, but not limited to, “eyewear with an integrated detection module.” *Id.* Thus, considering the “reality of the circumstances,” Howell-596 is in the same field as the ’174 patent.

Second, the Petition establishes that Howell-596 is reasonably pertinent to the problems addressed by the ’174 patent. The ’174 patent identifies a potential problem of incorporating electronic components into eyewear:

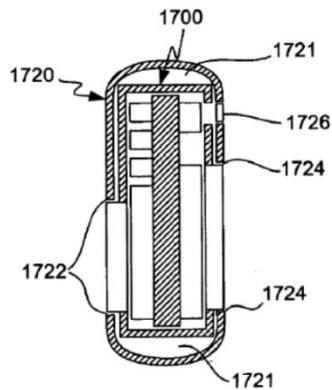
[I]t is becoming increasingly relevant to find way to incorporate electronic into eyewear without harming the aesthetics and functionality of the eyewear.

Ex.1001, 1:23-26; *see also* Ex.2016, ¶23. The '174 patent's solution to this problem is an electronics module disposed in a temple of the eyewear, and electrical conductors that "hold the electronic components...within a cavity of the temple." Ex.1001, 1:42-47.

Howell-596 also describes the problem of integrating electronics, such as "a [UV] detector, electronic circuitry[,], and an output device," into eyewear. Ex.1015, [0008]. Howell-596 describes how its eyewear also solves the problem identified by the '174 patent, providing eyewear with electronics that "[a]dvantageously...has minimal impact on the design of the end product[;] no tedious wiring is required [and] no other changes or complications to the eyeglass frames need be imposed." *Id.*, [0183].

For each of these two independent reasons, Howell-596 is analogous art to the '174 patent.

e-Vision also argues that a POSITA would not have been motivated to combine Howell-596 with Eichelberger because neither Howell-596 nor Eichelberger disclose or suggest "disposing the enclosure substantially within a temple of an eyeglass frame." POR, 63-65. But, as shown below and explained in the Petition, Howell-596's module housing 1700 (which contains internal electronic components) is positioned within, and enclosed by, eyewear housing 1720:

**FIG. 17B**

Ex.1015, Fig. 17B, [0196]; *see also* Pet., 84-85.

### **3. Howell-596 In View Of Eichelberger And Sikonowiz Renders Claim 18 Unpatentable (Ground 9)**

For Ground 9, e-Vision argues that claim 18 is not unpatentable because “a POSITA would [not] have been motivated to apply Sikonowiz to [eyewear].” POR, 65-66. But the Petition establishes that “Sikonowiz describes conformal coating as a well-known step in the assembly of PCBs.” Pet., 85-86 (citing Ex.1002, ¶¶224-227). “Sikonowiz provides that the ‘purpose of a conformal coating is to cover a printed-circuit assembly and protect it from environmental hazards such as moisture, dirt, and chemicals.’” Ex.1002, ¶225.

As Dr. Feland explains, Sikonowiz provides an express motivation to “apply[] a conformal coating to a PCB like Howell-596’s to prevent moisture and contaminants from impacting the PCB’s electronics.” *Id.*, ¶226. Dr. Feland further describes that a POSITA would have a reasonable expectation of success in applying Sikonowiz’s conformal coating to Howell-596’s PCB, “given that conformal coating

were common place with PCBs as far back as the 1980's.” *Id.*; Ex.1029, 30:1-12 (Dr. Oliver testifying that using a conformal layer was “very common, in particular on printed circuit boards, to protect the electronics.”); Ex.1030, 32:12-33:22 (Dr. Oliver testifying that “conformal layers [were] a very common way to protect electronics from many different things, and vapor and water is one of those things”). Indeed, e-Vision’s own expert, Dr. Oliver, confirmed that Sikonowiz is an example of a textbook he would have directed a student to prior to 2006 for information regarding conformal coatings. Ex.1029, 48:4-12.

Dated: June 23, 2025

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**CERTIFICATE OF COMPLIANCE**

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this **PETITIONER’S REPLY IN SUPPORT OF PETITION FOR INTER PARTES REVIEW** contains 5,538 words according to the word-processing program used to prepare this paper. The foregoing word count complies with the 5,600-word type-volume limit specified by 37 C.F.R. § 42.24(c)(1).

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**CERTIFICATE OF SERVICE**

I hereby certify that on the date below, a true and correct copy of **PETITIONER'S REPLY IN SUPPORT OF PETITION FOR INTER PARTES REVIEW** is being served via email pursuant to 37 C.F.R. § 42.6(e), to counsel for Patent Owner as addressed below:

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